

The agencies that participate in the NITRD Program are:

- AHRQ .....Agency for Healthcare Research and Quality
- DARPA .....Defense Advanced Research Projects Agency
- DOE/NNSA .....Department of Energy/National Nuclear Security Administration
- DOE/SC.....DOE/Office of Science
- EPA .....Environmental Protection Agency
- NASA .....National Aeronautics and Space Administration
- NIH .....National Institutes of Health
- NIST .....National Institute of Standards and Technology
- NOAA .....National Oceanic and Atmospheric Administration
- NSA .....National Security Agency
- NSF .....National Science Foundation

Other Federal agencies are welcome to participate in NITRD activities; the following agencies did so in FY 2004:

- AFRL.....Air Force Research Laboratory
- DoD/HPCMPO....Department of Defense/High Performance Computing Modernization Program Office
- FAA .....Federal Aviation Administration
- FDA .....Food and Drug Administration
- GSA .....General Services Administration
- ONR.....Office of Naval Research

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**THE  
U.S. GOVERNMENT'S  
NETWORKING AND  
INFORMATION TECHNOLOGY  
RESEARCH AND DEVELOPMENT  
PROGRAM**  
  
  


*Many agencies working together toward  
a single goal—U.S. leadership in the sciences,  
engineering, and advanced technologies*



## The Networking and Information

## Technology Research and Development

**(NITRD) Program is the Nation's primary source of revolutionary breakthroughs in advanced computing, networking, software, and information technologies.**



A unique collaboration of more than a dozen Federal research agencies, the NITRD Program seeks to:

- Assure continued U.S. leadership in computing, networking, and information technologies to meet Federal goals and support U.S. 21st century government, academic, and industrial interests
- Accelerate deployment of advanced and experimental technologies to enhance national security; maintain world leadership in science, engineering, and mathematics; improve the quality of life; promote long-term economic growth; increase lifelong learning; protect the environment; and harness information technology
- Advance U.S. productivity and competitiveness through long-term scientific and engineering research in computing, networking, and information technologies

The NITRD Program stems from the High-Performance Computing (HPC) Act of 1991 (P.L. 102-194) as amended by the Next Generation Internet Act of 1998 (P.L. 105-305). These laws authorize Federal agencies to set goals and prioritize their investments in information technology research and development (IT R&D)—including high-end computing systems, software, and applications; advanced networking;

software design for assurance, reliability, and security; human-computer interaction; information management technologies; societal impacts of IT; and IT workforce development. The laws also authorize establishment of the President's Information Technology Advisory Committee (PITAC).

The Interagency Working Group (IWG) for IT R&D meets quarterly to coordinate NITRD Program activities. The IWG reports to the Committee on Technology of the National Science and Technology Council (NSTC). The IWG comprises senior IT R&D managers from participating agencies and representatives from the Office of Management and Budget (OMB), Office of Science and Technology Policy (OSTP), and the National Coordination Office (NCO) for IT R&D.

The seven major technical areas of NITRD investments, called Program Component Areas (PCAs), are defined and structured by the IWG to target key research goals, as follows:



**High-End Computing Infrastructure and Applications (HEC I&A)**—to extend the state of the art in high-end computing systems, science and engineering applications, data management, and infrastructure



**High-End Computing Research and Development (HEC R&D)**—to optimize the performance of high-end computing systems and develop future generations of HEC systems to address Federal and national needs



**Human Computer Interaction and Information Management (HCI&IM)**—to develop new user interaction technologies, cognitive systems, information systems, and robotics that benefit humans



**Large Scale Networking (LSN)**—to develop leading-edge network technologies (such as optical, wireless, and hybrid), services, and techniques to enhance performance, security, and scalability

**Software Design and Productivity (SDP)**—to advance concepts, methods, techniques, and tools that improve software design, development, and maintenance to produce more usable, dependable, and cost-effective software-based systems

**High Confidence Software and Systems (HCSS)**—to develop the scientific foundations and IT to achieve affordable and predictable high levels of safety, security, reliability, and survivability, especially in U.S. national security and safety-critical systems

**Social, Economic, and Workforce Implications of IT and IT Workforce Development (SEW)**—to study the impact of IT on people and social and economic systems, develop the IT workforce, and foster innovative IT applications in education and training



A Coordinating Group (CG) of agency program managers associated with each PCA plans collaborative activities, coordinates agency investment areas, and assesses R&D directions in that PCA. The HEC CG covers both HEC PCAs. Led by two Co-Chairs selected from CG member agencies, CG activities

include annual agency budget and program reviews; regular monthly meetings and ad hoc interest group meetings; conferences, workshops, and seminars; preparation of research needs and workshop reports; and contributions to the NITRD Program's annual Supplement to the President's Budget and to special documents such as the NITRD Grand Challenges report. CGs report to the IWG.

The NCO provides technical and administrative support to the IWG and the CGs via its technical liaisons and administrative staff. The HPC Act authorizes these functions. Executive Order 13035 and its amendments authorize NCO support for the PITAC.



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